

# LINEAR DIODE LASER ARRAY LIGHT COUPLING APPARATUS

## Abstract of Disclosure

A light coupling apparatus for coupling a linear diode laser array to an optical fiber. The apparatus includes a cylindrical lens positioned adjacent and substantially parallel to the linear diode laser array. The cylindrical lens has a length substantially equal to the length of the linear diode laser array, and receives emitted light from the plurality of diode lasers within the linear diode laser array to collimate the light. The collimated light is received by a wedge-shaped coupling element between the cylindrical lens and the optical fiber. The coupling element has a length ( $L$ ) extending from an input surface to an output surface. The input surface defines a radius of curvature along a height ( $h$ ) that is substantially equal to the cylindrical lens length. The coupling element tapers from its input surface to its output surface. The input surface also has an associated width ( $w_1$ ), and the output surface has an associated width ( $w_2$ ). The input surface width is substantially equal to a diameter of the cylindrical lens, and the output surface width is substantially equal to a diameter of the input end of the optical fiber.

## Figures